Beginners, Experts, and Intermediates

School of Computer and Communication Sciences

EPFL

Pearl Pu

Experience levels of users

BEGINNERS, INTERMEDIATES, EXPERTS

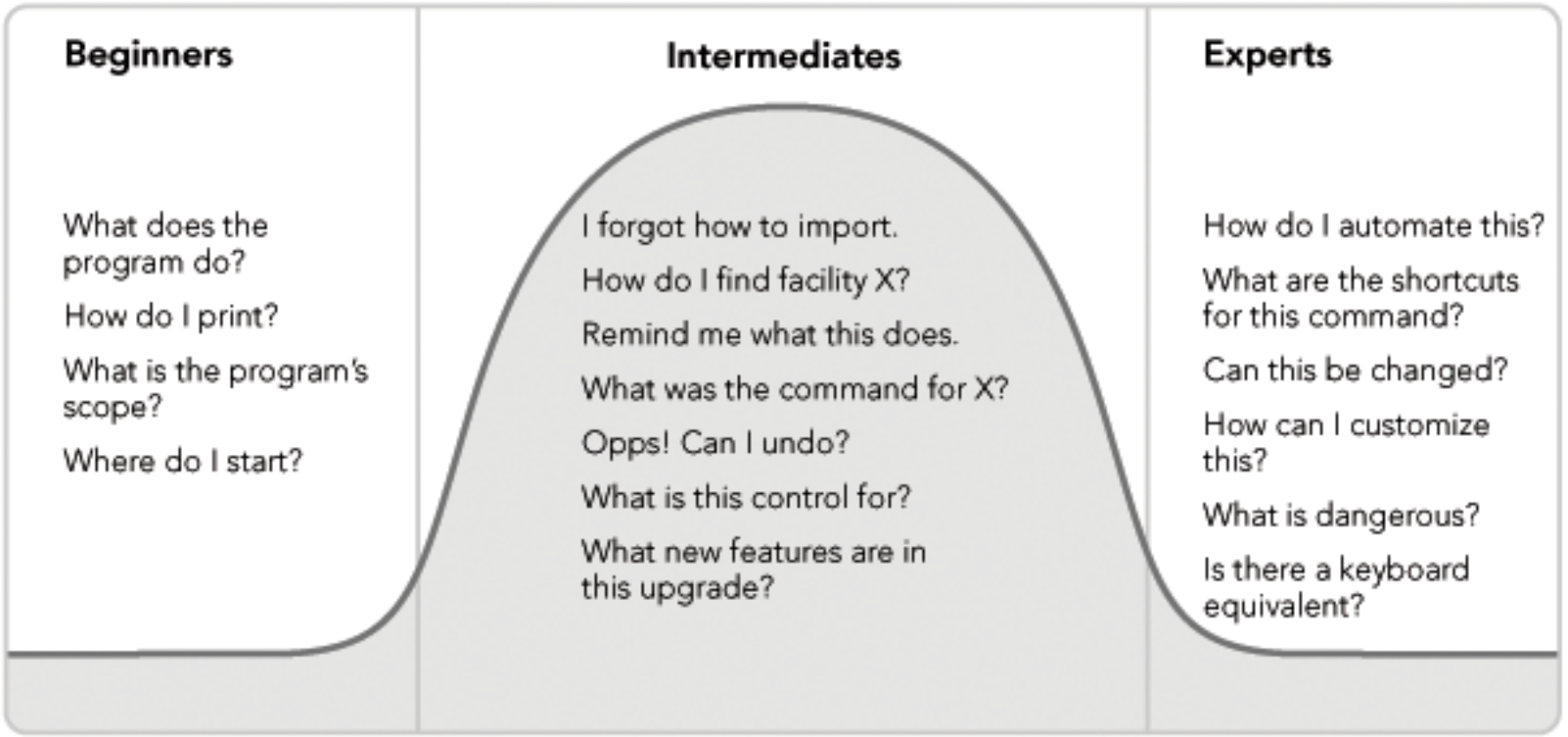
- Users are diverse not only in their gender, age, but also their knowledge and familiarity of IT, and their experience level interacting with a software.
- How to satisfy this experience diversity with a single interface?
  - Can we just provide a fast/slow track? wizard to beginners and shortcut keys for experts?
  - Why is this not a good solution?

DISTRIBUTION OF EXPERIENCE LEVELS?

When people interact with software, estimate the distribution of experience levels?

1. beginners (33%), intermediates (33%), expert (33%)
2. beginners (80%), intermediates (10%), expert (10%)
3. beginners (10%), intermediates (10%), expert (80%)
4. beginners (10%), intermediates (80%), expert (10%)

Perpetual intermediacy



WHY?

- What explains the perpetual intermediacy phenomenon?
- Why don't users like to remain in the beginner stage?
  - users don't like to be incompetent
  - learning and improving is rewarding, so they become intermediates very quickly
- Why can't users become experts?
  - they are busy, so they don't practice enough
  - their exposure to the software interface is intermittent thus they un-learn quickly
- Intermediate: most users gravitate in the center

DESIGN GOALS

- help beginners become intermediates as quickly and painlessly as possible
- avoid putting obstacles in the way of those intermediates who want to become experts
- keep perpetual intermediates happy as they stay firmly in the middle of the skill spectrum

Optimize design for the perpetual intermediates

Design for different experience levels

DESIGN FOR BEGINNERS

- Designers should ensure that
  - the product adequately reflects the user's mental model of his tasks
  - the interface gives an overview, scope, and purpose of a product
  - the interface breaks down the problem into smaller and achievable chunks
  - the interface provides good visuals for execution and evaluation

Example of design for beginners

mental model, overview, break-down of problems, and work flow

BAD EXAMPLES

- Wizard - takes time; many of them do not provide overviews
- Clipper - insults users' intelligence
- Online help - reference does not help users with getting an overview

Design for experts

- Give them the fast interaction possible: accelerator keys and brief dialog messages
- Give them novel and powerful features

Design for expert users is not the focus of this course

DESIGN FOR INTERMEDIATES

- Intermediate users maintain semantic knowledge of the system but loose syntactic knowledge
  - Make commands consistent and easy to remember
  - Give meaningful sequencing of steps
  - Give online assistance and help
    - ToolTips are good examples
  - Separate frequently used functions from esoteric ones

Designing for beginner and intermediate users is the focus of this course.

EXCEPTIONS

- In what circumstances is it good to optimize the user experience for experts?
  - specialized products where technical minded people dwell for long time
- What types of tools fall into this category?
  - development tools
  - scientific instrumentation and medical devices
- What types of tools should be optimized for beginners?
  - tools that are used in a transient manner, e.g., kiosks
  - tools for people with disabilities, seniors

Design Principles and Guidelines

Design principles for learning

1. Most users are intelligent but busy - they don't have time to learn
2. Most users stay at the intermediate skill level
3. Help beginners become intermediate as quickly and painlessly as possible
4. Don't stand in the way of the intermediates who want to become experts
5. Keep perpetual intermediates happy as they stay firmly in the middle of the skill spectrum (optimize design for intermediates)

DESIGN GUIDELINES

1. Provide overview, scope, and purpose for beginners
2. Design metaphors to help beginners transfer knowledge from other domains
3. Design icons to help users remember what the tools are good for
4. Intermediate users maintain semantic knowledge of the system but loose syntactic knowledge
   - make commands consistent and easy to remember
   - give meaningful sequencing of steps
   - give online assistance and help (e.g. ToolTips)
   - separate regular used functions from esoteric ones
5. Maintain consistency
   a. consistency of effects – same buttons (shape, color, labels), order of menu items, icons, and commands will always have the same effect in equivalent situations
   b. consistency of language – same dialogs (style and tone of voice) and error messages should be used
   c. consistency of screens – a good interaction design changes as little as possible from one screen to the next

USE OF METAPHORS

- Metaphors capitalize on ***analogical thinking***
- Metaphor is the use of familiar objects to convey the meaning of unfamiliar objects
- Metaphor helps with knowledge transfer (learn new concepts by recalling old knowledge)

SUCCESSFUL DESIGNS OF METAPHORS

- The desktop metaphor
- The excel sheet metaphor which uses accounting books as metaphors
- Metaphorical icons, e.g., the trash can

ICONS

- A small graphics or image to represent an object that can be manipulated by the user
- The use of icons is often favored as an alternative to command names
- A successful iconic interface can be achieved by a consistent metaphor (floppy disk for saving document, scissors for deleting, magnifying glasses for preview, etc.)

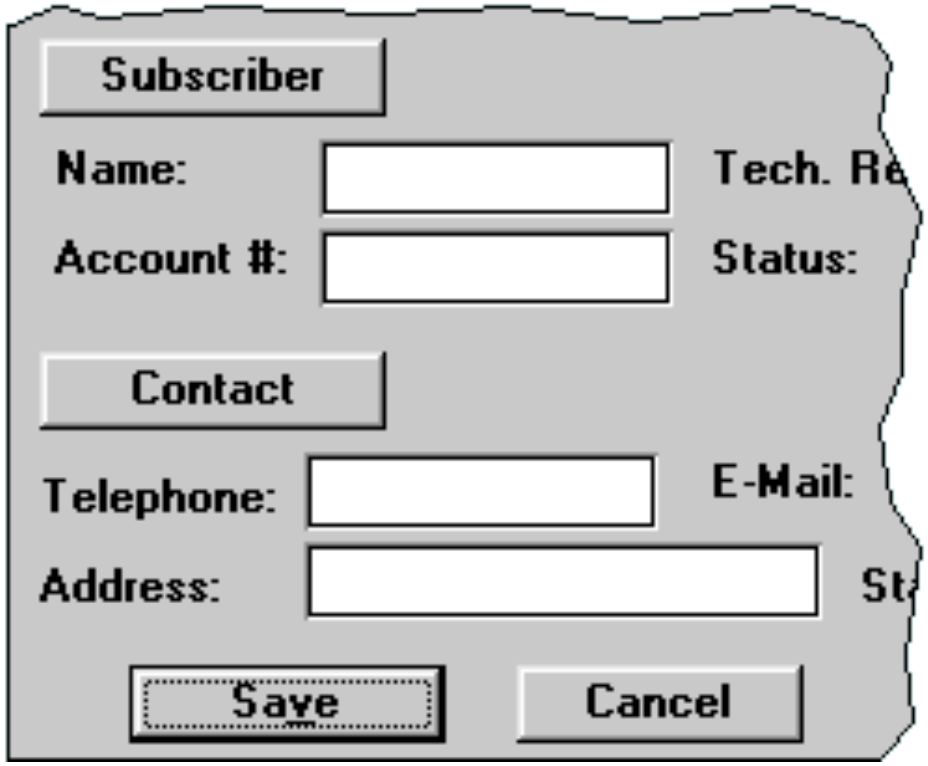
PROVIDING CONSISTENCY

- All three types of users need this principle

3 TYPES OF CONSISTENCIES

- Consistency of effects
  - Same buttons (shape, color, labels), order of menu items, icons, and commands will always have the same effects in equivalent situations
- Consistency of language
  - Same dialogs (style and tone of voice) and error messages should be used
- Consistency of screens
  - A good interaction design changes as little as possible from one screen to the next (main window, secondary windows)

What is not consistent?



What is a user-friendly interface?

- "User-friendly" "Easy to use" are poorly defined terms. They suggest little about how to reduce errors/ frustration and promote faster learning.
- The definition of a user-friendly interface should be reformulated as "how can we accelerate the process whereby novices begin to perform like intermediates"
- A user-friendly interface is one that accelerates the ***learning curve***.

THE END